

Hymenitis oneidodes, sp. n.

Fore wing above yellowish brown, with the veins orange. Costa orange to end of cell, inner margin blackish, tip with blackish border. Veins 2, 3, 4, and 5 with triangular blackish marks at tips, that at vein 3 the largest. An irregular discoidal black blotch spreading over lower discocellular. Hind wing above yellowish brown, with a very broad blackish marginal band, heavily dentated on inner margin, especially between veins 3 and 4. A faint indication in some lights of a yellow macular band from upper discocellular to outer margin. Two yellowish subapical spots and two further yellow spots on outer margin. Fore wing beneath as above. Hind wing beneath with large white wedge-shaped marks in the apical portion of marginal dark band and paired white spots between the veins thence to inner margin.

Expanse 67 mm.

1 ♀.

Hab. Ecuador.

XIII.—*Notes on Fossorial Hymenoptera*.—XXXII. *On new Species in the British Museum*. By ROWLAND E. TURNER, F.Z.S., F.E.S.

Family *Scoliidae*.Subfamily *ELIDINÆ*.*Elis (Mesa) ugandensis*, sp. n.

♀. Nigra; capite, femoribus anticis apice, tibiis anticis, tarsisque anticis rufis; flagello articulis quatuor apicalibus nigris; alis nigro-violaceis.

Long. 15 mm.

♀. Mandibles bluntly bidentate at the apex; clypeus with a strong carina from the base nearly reaching the apex, the apical margin with two minute teeth in the middle. Antennal tubercles large and rounded; head rectangular, much broader than long, eyes separated from the hind margin of the head by a distance equal to their greatest breadth; posterior ocelli twice as far from the eyes as from each other, and about three times as far from

the hind margin of the head as from each other; front closely and deeply punctured; vertex smooth and shining, with a few small scattered punctures. Thorax rather sparsely punctured, shining; the pronotum longer than the mesonotum; scutellum as long as the pronotum. Median segment broader than long, sparsely punctured, more closely at the base than at the apex, with two carinæ very near together converging from the base and almost touching at the apex; the apical slope rugosely punctured, the sides of the segment rather indistinctly obliquely striated. Abdomen shining, with large scattered punctures; sixth tergite rather more closely punctured, but without striæ. Hind femora produced into a strong spine near the apex beneath; hind tibiæ serrate; basal joint of the hind tarsi with a row of fine hairs beneath. Second abscissa of the radius very long, much longer than the third.

Hab. Toro Forest, Uganda (*C. G. Gowdey*), July 1912.

Nearly allied to the Oriental *E. tricolor*, Sm., both in the puncturation and the long second abscissa of the radius; but differing in the absence of the steel-blue colour on the abdomen, in the somewhat more slender build, in the different form of the clypeus, and in the narrower hind femora with a much more strongly developed spine. Not nearly allied to any other Ethiopian species.

Elis (Mesa) tricolor, Sm.

Myzine tricolor, Sm. Journ. Proc. Linn. Soc., Zool. ii. p. 91 (1858).

There are three closely allied forms in the British Museum, probably representing local races of one species. These may be separated by the following key:—

1. Anterior ocellus very distinctly further from the posterior margin of the head than from the antennal tubercles; scape and three basal joints of flagellum red; clypeus with a low median carina not reaching the apex; posterior slope of the median segment not concave in the middle *E. tricolor longiceps*,
[subsp. n.]
- Anterior ocellus as near to the posterior margin as to the antennal tubercles or nearer; antennæ wholly black; carina of clypeus very prominent or wholly absent; posterior slope of the median segment slightly concave 2.
2. Clypeus with a very prominent carina ending in a raised tubercle *E. tricolor tricolor*, Sm.
- Clypeus depressed in the middle, without a median carina *E. tricolor shuckardi*,
[subsp. n.]

Hab. E. tricolor tricolor, Sm., Borneo.

E. tricolor longiceps, subsp. n., Dibrughur, Assam.

E. tricolor shuckardi, subsp. n., India (probably the South or West), ex coll. Shuckard.

E. dimidiaticornis, Bingham, and *E. crassepunctata*, Turner, will probably prove to be the males of the two Indian subspecies.

Superfamily SPHECOIDEA.

Subfamily SPHECINÆ.

Sphex (Psammophila) lutaria, Fabr.

Sphex lutaria, Fabr. Mant. Insect. i. p. 273 (1787).

Ammophila affinis, Kirby, Trans. Linn. Soc. iv. p. 195 (1798).

Specimens from Gyantse, Tibet, have the first tergite almost entirely black.

S. hirsuta, Scop., occurs in the same locality.

Sphex (Psammophila) mahatma, sp. n.

♀. Nigra; abdomine segmentis primo, secundo, tertio quartoque dimidio basali rufis; femoribus anticis apice extremo subtus, tibiis anticis subtus, tarsis anticis, articulo primo basi nigro, tarsisque intermediis et posticis articulis tribus apicalibus ferrugineis; alis subhyalinis, venis nigris.

Long. 12-19 mm.

♀. Hairs of the head and thorax black, sparse; inner orbits parallel; posterior ocelli separated from the eyes by a distance about equal to the length of the third joint of the flagellum. Front densely, clypeus and vertex much more sparsely punctured; pronotum, mesonotum, and scutellum shining, very sparsely punctured; the mesopleuræ closely and rather indistinctly striated with large punctures between the striæ. Median segment opaque, transversely striated; the striæ very fine and close, only visible with a lens; the sides and apical slope of the segment more coarsely striated. Anterior coxæ not tuberculate at the apex; joints of the fore tarsi strongly asymmetrical; pulvilli distinct, not very small; tarsal ungues with a very minute tooth at the base. Petiole as

long as the second joint of the hind tarsus. Radial cell rounded at the apex.

Hab. Gyantse, Tibet, 13,000 ft. (*H. J. Walton*), June 30, 1904. Khamba Jong, Sikkim, 15,000–16,000 ft.

The striation of the dorsal surface of the median segment is much finer than in *S. lutaria*, from which it also differs in the colour of the nervures, tarsi, and first abdominal segment and in the sparser punctures of the mesonotum.

The male has the petiole longer than the second joint of the hind tarsus, but distinctly shorter than the basal joint and the colour of the tarsi is fuscous.

Sphex (Psammophila) sheffieldi, sp. n.

♀. Nigra, nigro-pilosa; mandibulis basi, segmentis abdominalibus primo, secundo tertioque basi rufis; clypeo argenteo-pubescente; alis flavidulis, margine apicali pallide infuscatis, venis fusco-ferrugineis.

Long. 22–27 mm.

♀. Head large and massive, broader than the thorax, densely punctured, clothed with black hairs, the clypeus with a delicate silver pubescence beneath the black hairs. Clypeus broadly truncate at the apex, the apical margin deflexed, the angles of the truncated margin well marked. Inner orbits parallel, the posterior ocelli separated from the eyes by a distance distinctly exceeding the length of the third joint of the flagellum. Thorax and median segment coarsely rugosely punctured, mesonotum with a distinct carina from the base to the middle; mesopleuræ rugose. Anterior coxæ not tuberculate at the apex; joints of the anterior tarsi asymmetrical, but not strongly so; tarsal unguis without a tooth. Petiole as long as the basal joint of the hind tarsi, the basal third strongly punctured and clothed with black hairs. Radial cell rather long, narrowly rounded at the apex; third cubital cell small, the second transverse cubital nervure nearly twice as long as the cubital margin of the cell and about three times as long as the radial margin.

Hab. Mlanje, Nyasaland (*S. A. Neave*), March 12–May 5, 2400–7000 ft.

Sphex (*Parapsammophila*) *testaceipes*, sp. n.

♂. Niger, albo-pilosus; mandibulis, apice excepto, clypeo in medio nigro-lineato, tegulis, pedibusque rufo-testaceis; coxis posticis, trochanteribus femoribusque posticis supra, tarsis intermediis posticisque articulo apicali, unguiculisque nigris; alis hyalinis, venis fusco-ferrugineis.

Long. 25 mm.

♂. Clypeus broadly rounded at the apex, subdenticulate in the middle of the apical margin, clothed with delicate silver pubescence, which extends on to the front. Head and sides of the thorax rather densely clothed with long white hairs, the hairs on the mesonotum and dorsal surface of the median segment cinereous. Eyes convergent towards the clypeus, where they are separated by a distance slightly exceeding twice the length of the scape and first joint of the flagellum combined. Posterior ocelli separated from the eyes by a distance scarcely equal to the length of the third joint of the flagellum. Head and pronotum punctured-rugulose, the clypeus shining and almost smooth; mesonotum rugulose; dorsal surface of median segment closely transversely striate, the striæ slightly curved in the middle. First joint of the petiole a little longer than the hind femur; second tergite longer than the apical breadth; seventh tergite broadly truncate at the apex; eighth sternite long, the sides almost parallel, the apex rather broadly truncate. Mesosternum not produced anteriorly. Tarsal ungues with two teeth close to the base; pulvilli large. Second recurrent nervure almost interstitial with the second transverse cubital nervure; second abscissa of the radius much longer than the third, third transverse cubital nervure rather strongly curved outwardly in the middle.

Hab. Valley of the Ruaha River, German East Africa (*S. A. Neave*), December 1910.

This has somewhat the build of *S. dives*, Brullé, but may easily be distinguished by the colour of the legs, the form of the apical segments, the broader head and clypeus, and the sculpture of the median segment, also by the presence of two teeth on the tarsal ungues.

Sphex (*Parapsammophila*) *erythrocephala*, Fabr.

Sphex erythrocephala, Fabr. Spec. Insect. i. p. 445 (1781). ♀.

Ammophila fuscipennis, Sm. Trans. Zool. Soc. London, vii. p. 187 (1870). ♂.

The tarsal ungues of the male have two teeth—not one only, as stated by Bingham.

Sphex haimatosoma, Kohl.

Ammophila haimatosoma, Kohl, Verh. zool.-bot. Ges. Wien, xxxiii. p. 383 (1883). ♀.

Specimens of this species were taken at Karachi by Mr. Comber. They are very highly coloured, being without black on the head and thorax, and with the blue colour of the apical abdominal segments more strongly developed; the wings are of a deep yellow. *S. basalis*, Sm., which also occurs at Karachi is very near this species, but has the mesonotum much more strongly striated and is very different in colour.

Sphex punctata, Sm.

Ammophila punctata, Sm. Cat. Hym. B.M. iv. p. 218 (1856). ♀.

I cannot see that this differs specifically from *S. sabulosa*, Linn., though the red on the abdomen is more extensive. This form occurs at Gyantse in Tibet in June.

Subfamily *PHILANTHINÆ*.

Cerceris spinipleuris, nom. n.

Cerceris varipes, Sm., Ann. & Mag. Nat. Hist. (4) xii. p. 413 (1873). ♀.
(Nec Smith, 1858).

This Australian species is quite distinct from the species described by Smith from Celebes in 1858 as *C. varipes*, so a new name is necessary.

Cerceris yalensis, Turn.

Cerceris yalensis, Turn. Trans. Ent. Soc. London, p. 745, 1912 (1913).
♀ (nec ♂).

The female is the type of the species. The male described with it does not belong to it, but to *C. cratocephala*, Cam.

Subfamily *STIZINÆ*.

Stizus persimilis, sp. n.

♀. Nigra; clypeo, labro, mandibulis, palpis, antennis, pronoto

margine postico, in medio angustissime, lateribus late, callis humeralibus, mesonoto fascia laterali utrinque ante tegulas, femoribus anticis, femoribus intermediis posticisque apice, tibiis tarsisque flavo-aurantiacis; segmentis dorsalibus secundo macula parva utrinque angulis apicalibus, tertio quartoque fascia lata longitudinali laterali, quinto fere omnino, sextoque omnino flavis; alis nigro-cæruleis.

Long. 16 mm.

♀. Extremely near to *S. klugii*, Sm. (*S. apicalis*, Klug), of which I formerly considered it a variety (see Ann. & Mag. Nat. Hist. (8) xvii. p. 444, 1916). But I have since had the opportunity of comparing it with a female of *klugii* in the collection of the Rev. F. D. Morice, and find the following distinctions in addition to colour:—

<i>S. klugii</i> .	<i>S. persimilis</i> .
First tergite sparsely punctured.	First tergite closely punctured.
Sixth tergite closely rugosely punctured.	Sixth tergite sparsely and more finely punctured.

Hab. 30 miles from Magadi Junction, British East Africa (*F. G. Hamilton*), April 1912.

Subfamily CRABRONINÆ.

Rhopalum ornatipes, sp. n.

♀. Nigra; mandibulis, apice excepto, clypeo, scapo, flagello dimidio basali subtus, pronoto, scutello, tegulis, pedibus anticis intermediisque, trochanteribus posticis, tibiis posticis dimidio basali, metatarsisque posticis flavis; alis hyalinis, iridescentibus, venis fuscis.

Long. 4 mm.

♀. Eyes separated at the base of the clypeus by a distance equal to about one-quarter of the length of the scape, the facets much larger in front than on the side; clypeus short and broad, clothed with delicate white pubescence. Head smooth and shining, an indistinct groove from the posterior ocelli not quite reaching the eyes; temples about half as broad as the eyes. Thorax smooth and shining; pronotum transverse; median segment almost smooth, with a well-marked median sulcus. First tergite very slightly longer than the second, not much swollen at the apex; second tergite broadened from the base, nearly half as long again

as the third. Serration of the hind tibiæ almost obsolete. Radial cell broadly truncate at the apex; recurrent nervure received close to two-thirds from the base of the cubital cell.

Hab. Zungeru, N. Nigeria (*J. W. Scott-Macfie*), January-February 1911.

Rhopalum spinulifer, sp. n.

♂. Niger; scapo, pronoto, postscutello, callis humeralibus, pedibus anticis intermediisque, trochanteribus coxisque exceptis, flavis; segmentis abdominalibus duobus basalibus subtus lateribusque, segmentis sexto apice, septimoque, femoribus posticis apice, tibiis posticis supra nigro-maculatis, metatarsisque posticis basi ferrugineis; tegulis brunneis; alis hyalinis, iridescentibus, venis nigris; petiolo apice spina minuta armato.

Long. 4 mm.

♂. Eyes separated at the base of the clypeus by a distance about equal to the length of the scape; antennæ short, the basal joints of the flagellum normal, not tuberculate or emarginate. Head subopaque, very minutely punctured; posterior ocelli as far from each other as from the eyes. Pronotum transverse, not rounded at the angles; thorax subopaque, minutely and closely punctured. Petiole rather stout, distinctly swollen at the apex, with a small spine at the apex on the dorsal surface; the second tergite half as long again as the first, broadened from the base, no longer than the third. Hind tibiæ stout, distinctly but not strongly serrate. Radial cell very broadly truncate at the apex; recurrent nervure received just beyond the middle of the cubital cell.

Hab. Kuranda, N. Queensland (*F. P. Dodd*).

In the form of the petiole and following segments this resembles *R. frenchii*, Turn., but differs much in colour and in the remarkable spine on the petiole.

Rhopalum imbelle, Turn.

Rhopalum tricolor, Sm., subsp. *imbelle*, Turn: Ann. & Mag. Nat. Hist. (8) xv. p. 92 (1915).

In addition to the distinctions given in the description, the male antennæ are much shorter in *imbelle* than in *tricolor*; the third joint of the flagellum, which is emarginate beneath, being more than twice as long as the apical breadth in *tricolor*, and scarcely half as long again in *imbelle*. On

the whole, I am inclined to think that the two forms should stand as distinct species.

Subfamily *LARRINÆ*.

Tachytes diversicornis, sp. n.

♂. Niger, albo-pubescentis; flagello articulis 5-9, articuloque quarto subtus fulvis; tarsis brunneo-rufescentibus; segmentis dorsalibus 4 basalibus fascia apicali argenteo-pubescente; segmento septimo dense argenteo-pubescente; alis hyalinis, venis tegulisque testaceis.

♀. Mari simillima; antennis nigris; segmento dorsali sexto aureo-pubescente.

Long., ♂ 9 mm., ♀ 10 mm.

♂. Clypeus very broadly rounded at the apex, clothed with silver pubescence, which extends on to the face; joints of the flagellum not arcuate. Eyes separated on the vertex by a distance fully equal to the combined length of the two basal joints of the flagellum. Thorax and median segment clothed with short whitish hairs; the median segment scarcely as long as the scutellum and postscutellum combined. Seventh dorsal segment broadly rounded or subtruncate at the apex; eighth ventral segment strongly emarginate, the apical angles of the emargination produced into acute spines. Radial cell narrowly rounded at the apex, third abscissa of the radius longer than the second, the third cubital cell extending on the cubitus beyond the apex of the radial cell. Basal joint of the fore tarsi with three small white spines.

♀. Basal joint of the fore tarsus with five spines. Second ventral segment subopaque, microscopically punctured, the apical margin broadly smooth in the middle; pygidial area subtriangular, narrowly rounded at the apex.

Hab. Karachi (*E. Comber*), September and October.

This approaches the Algerian *T. maculicornis*, Saund., but in that species the male has the joints of the flagellum thickened and arcuate beneath. In both species the intermediate metatarsus of the male is curved and somewhat strongly asymmetrical at the apex. The female of *maculicornis* has the pygidial area clothed with silver pubescence.

Tachytes nilotica, sp. n.

♀. Nigra, albo-pubescentis; mandibulis, palpis, femoribus, tibiis tarsisque ferrugineis; femoribus anticis basi nigro suffusis;

tegulis testaceis; segmentis abdominalibus 1-5 apice angusto brunneis, dorsalibus 1-4 fascia apicali argenteo-pubescente; area pygidiali aureo-pubescente; alis hyalinis, venis ferrugineis. Long. 10 mm.

♀. Galea short, broader than long. Clypeus very broadly rounded at the apex, the front and clypeus clothed with silver pubescence. Eyes separated on the vertex by a distance slightly exceeding the length of the two basal joints of the flagellum. Thorax closely and minutely punctured, clothed with short greyish hairs, with short silver pubescence on the mesopleuræ. Median segment more than half as long again as the scutellum, very minutely punctured and clothed with short whitish hairs; the posterior slope with a deep longitudinal sulcus, which extends to the apex of the dorsal surface. Second ventral segment sub-opaque, very finely and closely punctured; third and following ventral segments shining, with a few scattered punctures. Pygidial area longer than the basal breadth, narrowly rounded at the apex. Basal joint of fore tarsus with five spines. Radial cell narrowly rounded at the apex, not reaching as near to the outer margin of the wing as the apex of the third cubital cell; second and third abscissæ of the radius subequal.

Hab. Meadi, Egypt (*Egyptian Department of Agriculture*), July.

This species bears a strong superficial resemblance to *Tachysphex fluctuatus*, Gerst.

Tachytes rufiscutis, sp. n.

♂. Niger; palpis, galea, mandibulis dimidio basali, clypeo, antennis, prothorace pedibusque ferrugineis; mesonoto antice, scutello postscutelloque fusco-ferrugineis; tegulis testaceis; segmentis duobus apicalibus rufo-brunneis; alis flavo-hyalinis, venis ferrugineis. Long. 18 mm.

♂. Galea scarcely longer than the scape, a little longer than its basal breadth; palpi not elongate. Head covered with whitish hairs, changing to pale golden on the clypeus. Vertex opaque, very finely punctured; eyes separated on the vertex by a distance scarcely equal to half the length of the second joint of the flagellum. Antennæ stout, the joints not arcuate beneath. Thorax opaque, finely and very closely punctured; median segment twice as long as

the scutellum, without a distinct median sulcus, but with a strong apical fovea, the posterior slope with a strong median sulcus. Abdomen closely and minutely punctured, rather sparsely clothed with very short silver-grey pubescence, which does not form apical fasciæ; second sternite very minutely and closely punctured on the sides, much more strongly and rather sparsely in the middle; the third and following sternites very sparsely and deeply punctured in the middle. Seventh tergite elongate-triangular, rather narrowly rounded at the apex, densely clothed with coarse reddish-gold pubescence. Eighth sternite rather narrowly truncate at the apex, the angles not produced. First recurrent nervure interstitial with the first transverse cubital nervure, second received just before the middle of the second cubital cell; third abscissa of the radius nearly twice as long as the second and about equal to the first. Six spines on the basal joint of the fore tarsus.

Hab. Mlanje, Nyasaland, 2300 ft. (*S. A. Neave*), October.

A very distinct species in colour, in the position of the first recurrent nervure, and in the even distribution of the pubescence of the tergites.

XIV.—*On Barnacles of the Genus Scalpellum from Deep-sea Telegraph-Cables.* By W. T. CALMAN, D.Sc.

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DURING the last few years the British Museum (Natural History) has received collections of deep-sea animals taken from telegraph-cables raised for repair in the Atlantic and in Oriental seas. Most of these collections have been obtained by the cable-ships of the Eastern and Associated Telegraph Companies, and the Museum is indebted to Mr. Walter Judd, Electrician-in-Chief of these companies, who has taken much trouble to facilitate the collecting and safe transmission of the specimens. The Museum is not less indebted to the captains and other officers, and particularly to the medical officers of the various ships, by whom the collections were actually made and who have supplied exact details of the positions and depths at which the specimens were taken.

The following is a list of the ships by which the specimens described in this paper were obtained, and indicates the